

Remarks

In the Office Action mailed April 20, 2001, the Examiner objected to the drawings. Specifically, the Examiner noted that in Fig. 4c, upward pointing arrow 82 should be pointing in the opposite (downward) direction. The arrow should also have its element number changed from "82" to -- 84 -- in accordance with the specification at page 11, lines 29-31. An appropriate correction has been made as shown in the marked up drawings accompanying this amendment.

The Examiner also objected to Fig. 5 as requiring an arrow pointing to the right and numbered -- 142 -- to be consistent with the specification as page 15, lines 16-21. An appropriate arrow and reference numeral have been added to Fig. 5c as shown in the accompanying marked up drawings.

Approval of the amended figures is respectfully requested and withdrawal of the objection is also requested.

The disclosure was objected to because of several informalities. Specifically, the word "arrows" was requested to be changed to -- arrow-- at several locations. Appropriate correction has been made and withdrawal of the objection is respectfully requested.

The Examiner has rejected claims 37-42 under 35 U.S.C. §102(e) as being anticipated by Somaki et al. (U.S. Patent No. 5,641,113). The Examiner notes in his remarks that the limitation reciting "the second insulating layer includes an adhesive" is taught by Somaki et al., specifically at col. 5, lines 5-26.

The Examiner's interpretation of Somaki et al. is respectfully traversed. Somaki et al. shows and teaches the use of a fluid resin which has a tacky or sticky characteristic at room temperature to form a thin layer of resin over the solder bumps 13a. After the active side of the package 11 has been coated with a thin layer of the resin, the resin is cured and hardened. That is, the resin has a sticky or tacky characteristic prior to curing, but is not used as an adhesive and in fact is not sticky or tacky after curing. The resin 14 in Somaki et al. is used only as a cured encapsulant. Somaki et al. does not show, teach or suggest that the resin is an adhesive. Accordingly, it is respectfully submitted that claims 37-42 are not anticipated by Somaki et al., and withdrawal of the rejection is respectfully requested.

With the above amendments, the applicants have made a good faith effort to place the application in condition for allowance, and notice to that effect is respectfully requested. If it

would in any way facilitate the allowance of this application, the Examiner is invited to contact the below-signed attorney at 512-984-3958.

The Commissioner of Patents is authorized to charge any fees due or credit any overpayments to Deposit Account No. 13-3723.

Registration Number 39,766	Telephone Number 512-984-3958
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Respectfully submitted,

By   
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In another alternate removal method, shown in FIGs. 4a-4c, an article 80 with a surface 81 (exaggerated for illustration purposes) having an affinity for the material (e.g., adhesive) of the insulating layer 36, greater than the surfaces 30a of the bumps 30, is brought into contact with the precursor circuit element 20p (in the direction of the arrow[s] 82) (FIG. 4a). It is preferred that the surface 81 be substantially planar and that this surface be rough or sticky. The article 80 is subsequently pushed into contact with the insulating layer 36 of the precursor circuit element 20p toward the bumps 30 (in the direction of the arrow[s] 82), such that only the insulating layer 36, along the apexes 32 of the bumps 30 (preferably along an arc proximate the apex 32) beyond plane A, contacts the article surface 81 (FIG. 4b).

As shown in FIG. 4c, upon removal (separation) of the article 80 from the precursor circuit element 20p (now the circuit element 20") (in the direction of the arrow[s] 84), the insulating layer portions 36', formerly on the precursor circuit element 20p, are now on the article surface 81. With the insulating layer portions 36' removed, the resultant circuit element 20" has a now-exposed bump surface 30a proximate the bump apexes 32. This exposed bump surface 30a is sufficient to promote an electrical connection between this circuit element 20" and another circuit element (e.g., circuit element 21), while substantial amounts of the insulating layer 36 remain on the substrate 22 and bump 30 to facilitate the mechanical connection between the above circuit elements. Preferably a sufficient amount of the remaining insulating layer 36 remains intact, having been unaffected by this removal step. Upon completion of the removal step, the circuit element 20" is ready for further processing, in accordance with the methods as detailed below (as described below for circuit element 20).